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PARALYSIS OF SERRATUS MAGNUS.

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T. M., aged twenty-four, white, married, presented himself, September 16, 1889, at Philadelphia Polyclinic Service of Dr. Chas. K. Mills, with the following history: June 7, 1889, at 4 A. M., while at night-work in a dye-house in Wilmington, Del., he noticed he could only raise his right arm half way to the shoulder. He had some pain in the shoulder at the time, which continued at intervals for two weeks, not only when he attempted to raise his arm, but when it was perfectly quiet. General health good. Father died at forty-five of sun-stroke; brother and sister living in good health.

Present condition: Very slight wasting of muscles of right shoulder as compared with the left. When the arm is at rest there is not much deformity. (Fig. I.)

The inferior point of left shoulder is lower than the right; the lower angle of right scapula somewhat nearer the spine than the left. With right arm elevated (Figs. II., III.), the scapula is raised up and projects behind in a wing-like manner; the inferior angle goes backward toward the spine, external angle upward and forward. He cannot thrust the scapula forward as in the left or well side. He can only raise his arm half way to the shoulder.

Farado-contractility abolished; reactions to galvanism

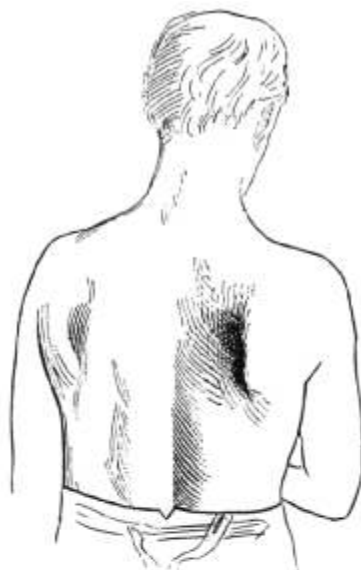


FIG. I.



FIG. II.



FIG. III.

present, but altered; modal changes; chest-wall smoother on right than on left side; insertions of serratus (sixth to ninth ribs) are not seen during forced inspiration. From the inability of the patient to raise the arm to the horizontal position, there is apparent involvement of the deltoid. "The arm is raised least by the posterior and most by the anterior fibres (of deltoid), but even the latter only elevate it to a right angle with the trunk" (Gowers). According to Allen ("Human Anatomy"): "When the entire muscle (serratus magnus) contracts, the ribs being fixed, the scapula is drawn forward (adducted) and held firmly against the thorax, thus enabling the muscles arising from the scapula to secure definite lines of traction. The most important of these is the deltoid, which cannot effectively raise the arm from the vertical to the horizontal position unless the scapula has been previously fixed by the serratus magnus."

Niemeyer says ("Text-Book of Practical Medicine," vol. ii., p. 336): "The serratus is especially required in the act of elevating the arms above a horizontal level, as it then draws the lower angle of the scapula outward and turns the glenoid cavity of the joint upward. It is by this act alone, and not by the contraction of the deltoid, that we are enabled to lift the arm above the shoulder. When the serratus is paralyzed, the inner border of the scapula, and particularly its lower angle, instead of lying against the chest, stands up like a wing, drawing up a three-cornered fold of skin before it and admitting of our reaching deeply into the subscapular fossa. The antagonistic muscles, the trapezius and levator scapulæ, have drawn the superior angle upward, and the weight of the arm and the pectoralis minor have depressed the external angle and thrown it forward."

In most of the cases reported there is a history of traumatism. Ross ("Diseases of Nervous System") reports the case of a man having fallen upon his right shoulder, in which the characteristic deformity was present. The man was able, but with some difficulty, to raise his arm above the horizontal level. Ross attributes the paralysis in this

case not to direct injury to the muscle, but to "injury and consequent neuritis of the long thoracic nerve as it passes through the scalenus medius, caused by the sudden contraction of the muscle when the patient threw out his right arm in order to protect himself while falling."

G. V. Poore ("*Electricity in Medicine and Surgery*") relates a case in which the patient "over-exerted himself and says he strained his right arm, and complained then and some time afterward of severe pain in right shoulder and arm. One point of great interest in this case is the time of the appearance of the paralysis, which was not till three months after the date of the mishap to which the patient attributes his troubles. The strain seems to have affected the brachial plexus, and to have caused a sub-acute attack of neuritis, as evinced by the pain and tenderness along the nerves and the congestion and sweating of the hand."

According to Erb ("*Ziemssen's Cycl. of Med.*," vol. xi., p. 530): "Paralysis of the serratus, both unilateral and bilateral, has not unfrequently been observed after over-exertion of the muscles of the shoulder, as in mowers, puddlers, shoe and rope-makers. These various circumstances explain why paralysis of the serratus muscle is far more frequent in men than in women, and chiefly occurs on the right side. 'Catching cold' is also a frequent cause, numerous cases having been reported in which the affection has been produced by exposure to draughts, by sleeping on damp ground or near a damp wall."

The paralysis in our patient, T. M., was evidently due to this latter cause, as it occurred while at work during a damp night. The treatment recommended was galvanism and massage and the remedies for rheumatism. The treatment of these cases is not very satisfactory, especially as regards quick recovery.

Erb says: "After having made its appearance suddenly or gradually, it may remain stationary for a variable period, often for many months, and it only very gradually terminates in recovery." This statement is verified in the treatment of the case reported. His physician, Dr. Stubbs, of Wilmington, Del., writes (November 8, 1889) that his condition is about the same as when he first presented himself at the Polyclinic.